

VANNATTA  
"Communications Receivers  
And Methods Therefor"  
Atty. Docket No. CS99004RL

Appl. No. 10/033,999  
Confirm. No. 1892  
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## REMARKS

### Request for Reconsideration, Informal Matters, Claims Pending

The Official action mailed on 7 May 2004 has been considered carefully. Reconsideration of the claimed invention in view of the amendments above and the discussion below is respectfully requested.

Claim 25 was amended formally by the addition of punctuation.

Claims 1-27 are pending.

### Allowability of Claims Over Whikchart & Khayrallah

#### Rejection Summary

Claims 1-27 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,178,314 (Whikchart) in view of U.S. Patent No. 6,047,171 (Khayrallah). Official Action, 7 May 2004, para. 2.

#### Allowability of Claim 1

Regarding independent Claim 1, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest a

... method in direct conversion and intermediate frequency RF receivers having a signal with a desired signal portion and a distortion products portion, comprising:  
determining a ratio of powers,

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the ratio of powers is power of the signal distortion products divided by power of both the desired signal and the signal distortion products;

determining whether the ratio of powers exceeds a predetermined threshold;

filtering the signal distortion products with a filter having a non-zero bandwidth of rejection if the ratio of powers is above the predetermined threshold.

Whikchart discloses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients. Col. 3: 8-11; 65-68. The Examiner's references to various passages of Whikchart and Khayrallah are misplaced. At col. 3, lines 8-41, Whikchart discusses DSP processing of a digitized IF signal. At col. 4: 5-38 and col. 4, lines 50 – col. 5, line 60, Whikchart discusses the selection of the switched filter coefficients.

The Examiner's reliance on Khayrallah is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and adjacent signal strength. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah merely discusses adjacent channel interference. Neither Whikchart nor Khayrallah disclose or suggest a ratio of powers that is a "... power of the signal distortion products divided by power of both the desired signal and the signal distortion products..." and "... filtering the signal distortion products with a filter having a non-zero bandwidth of rejection if the ratio of powers is above the predetermined threshold" as recited in Claim 1. Claim 1 and the claims that depend therefrom are patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 2

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Regarding Claim 2, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 1,

... filtering the signal distortion products with the filter having a bandwidth of rejection equal to zero if the ratio of powers is not above the predetermined threshold.

Whikchart and Khayrallah cannot possibly meet the limitations of Claim 2 since neither reference suggests a ratio of powers that is a "... power of the signal distortion products divided by power of both the desired signal and the signal distortion products...." Whikchart nor Khayrallah are concerned with adjacent channel interference. Claim 2 is thus further patentably distinguished over Whikchart nor Khayrallah.

### Allowability of Claim 3

Regarding Claim 3, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 1,

... dynamically adjusting the bandwidth of rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 3 is thus further patentably distinguished over Whikchart and Khayrallah.

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#### Allowability of Claim 4

Regarding Claim 4, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 3,

... dynamically adjusting the bandwidth of rejection by selecting a bandwidth of rejection value from a look-up table for a particular power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 4 is thus further patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 5

Regarding Claim 5, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 3,

... dynamically adjusting the predetermined threshold as a function of the power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 5 is thus further patentably distinguished over Whikchart and Khayrallah.

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#### Allowability of Claim 6

Regarding Claim 6, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 1,

... dynamically adjusting the predetermined threshold as a function of the power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 6 is thus further patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 7

Regarding Claim 7, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 1,

... the signal distortion products include narrowband intermodulation distortion products, determining power for the signal distortion products by determining power for the narrowband intermodulation distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "narrowband intermodulation distortion products". Claim 7 is thus further patentably distinguished over Whikchart and Khayrallah.

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### Allowability of Claim 8

Regarding Claim 8, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 7,

... dynamically adjusting the bandwidth of rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 8 is thus further patentably distinguished over Whikchart and Khayrallah.

### Allowability of Claim 9

Regarding Claim 9, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 1,

... dynamically adjusting rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 9 is thus further patentably distinguished over Whikchart and Khayrallah.

### Allowability of Claim 10

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Regarding Claim 10, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest a

... method in direct conversion and intermediate frequency RF receivers, comprising:  
determining power for a desired signal;  
determining power for signal distortion products;  
filtering the signal distortion products with a filter;  
dynamically adjusting a bandwidth of rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart discloses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients. Whikchart at col. 3: 8-11; 65-68. The Examiner's references to various passages of Whikchart and Khayrallah are misplaced. At col. 3, lines 8-41, Whikchart discusses DSP processing of a digitized IF signal. At col. 4: 5-38 and col. 4, lines 50 – col. 5, line 60, Whikchart discusses the selection of the switched filter coefficients.

The Examiner's reliance on Khayrallah is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and adjacent signal strength. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah merely discusses adjacent channel interference. Neither Whikchart nor Khayrallah disclose or suggest a ratio of powers that is a "...determining power for signal distortion products..." and "...dynamically adjusting a bandwidth of rejection of the filter as a function of the power for both the desired signal and the signal distortion products" as recited in Claim 10. Claim 10 and the claims that depend therefrom are patentably distinguished over Whikchart and Khayrallah.

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### Allowability of Claim 11

Regarding Claim 11, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 10,

... dynamically adjusting the bandwidth of rejection by selecting a bandwidth of rejection value from a look-up table for a particular power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 11 is thus further patentably distinguished over Whikchart and Khayrallah.

### Allowability of Claim 12

Regarding Claim 12, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 10,

... determining whether a ratio of powers exceeds a predetermined threshold, the ratio of powers is the power for the signal distortion products divided by the power for both the desired signal and the signal distortion products;

setting the bandwidth of rejection equal to zero if the ratio of powers does not exceed the predetermined threshold.

Claim 12 is thus further patentably distinguished over Whikchart and Khayrallah.

### Allowability of Claim 13



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Regarding Claim 13, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 12,

... dynamically adjusting the predetermined threshold as a function of the power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 13 is thus further patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 14

Regarding Claim 14, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 10,

... the signal distortion products include narrowband intermodulation distortion products, determining power for the signal distortion products by determining power for the narrowband intermodulation distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "narrowband intermodulation distortion products". Claim 14 is thus further patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 15

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Regarding Claim 15, Whikchart and Khayrallah fail to disclose or suggest in combination with the limitations of Claim 10,

... dynamically adjusting rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 15 is thus further patentably distinguished over Whikchart and Khayrallah.

Allowability of Claim 16

Regarding Claim 16, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest a

... method in direct conversion and intermediate frequency RF receivers, comprising:  
determining power for signal distortion products;  
determining power for a desired signal;  
filtering the signal distortion products with a filter;  
dynamically adjusting a rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart discloses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients. Col. 3: 8-11; 65-68. The Examiner's references to various passages of Whikchart and Khayrallah are misplaced. At col. 3, lines 8-41, Whikchart discusses DSP

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processing of a digitized IF signal. At col. 4: 5-38 and col. 4, lines 50 – col. 5, line 60, Whikchart discusses the selection of the switched filter coefficients.

The Examiner's reliance on Khayrallah is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and adjacent signal strength. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah merely discusses adjacent channel interference. Neither Whikchart nor Khayrallah disclose or suggest "...filtering the signal distortion products with a filter ..." and "... dynamically adjusting a rejection of the filter as a function of the power for both the desired signal and the signal distortion products" as recited in Claim 16. Claim 16 and the claims that depend therefrom are patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 17

Regarding Claim 17, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 16,

... determining whether a ratio of powers exceeds a predetermined threshold, the ratio of powers is the power for the signal distortion products divided by the power for both the desired signal and the signal distortion products;  
setting the rejection of the filter equal to zero if the ratio of powers does not exceed the predetermined threshold.

Whikchart and Khayrallah do not determine a ratio of powers that is "... the power for the signal distortion products divided by the power for both the desired signal and the signal distortion products..." and therefore cannot

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possibly suggest "...setting the rejection of the filter equal to zero if the ratio of powers does not exceed the predetermined threshold" as recited in Claim 17. Claim 17 is thus further patentably distinguished over Whikchart and Khayrallah.

Allowability of Claim 18

Regarding Claim 18, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 17,

... dynamically adjusting the predetermined threshold as a function of the power for both the desired signal portion and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 18 is thus further patentably distinguished over Whikchart and Khayrallah.

Allowability of Claim 19

Regarding Claim 19, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 15,

... the signal distortion products include narrowband intermodulation distortion products, determining power for the

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signal distortion products by determining power for the narrowband intermodulation distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "narrowband intermodulation distortion products". Claim 15 is thus further patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 20

Regarding independent Claim 20, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest a

... method in radio communications devices having a receiver receiving a wideband signal in the presence of narrowband blockers, comprising:  
determining power for narrowband intermodulation distortion products;  
determining power for a desired signal;  
filtering the desired signal and distortion products;  
dynamically adjusting at least one of a bandwidth of rejection and rejection of the filter as a function of the power for both the desired signal and the narrowband intermodulation distortion products.

Whikchart discloses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients. Col. 3: 8-11; 65-68. The Examiner's references to various passages of Whikchart and Khayrallah are misplaced. At col. 3, lines 8-41, Whikchart discusses DSP processing of a digitized IF signal. At col. 4: 5-38 and col. 4, lines 50 – col. 5, line 60, Whikchart discusses the selection of the switched filter coefficients.

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The Examiner's reliance on Khayrallah is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and adjacent signal strength. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah merely discusses adjacent channel interference. Neither Whikchart nor Khayrallah disclose or suggest "... dynamically adjusting at least one of a bandwidth of rejection and rejection of the filter as a function of the power for both the desired signal and the narrowband intermodulation distortion products" as recited in Claim 20. Claim 20 and the claims that depend therefrom are patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 21

Regarding Claim 21, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 20,

... determining whether a ratio of powers exceeds a predetermined threshold,

the ratio of powers is the power for the narrowband intermodulation distortion products portion divided by the power for both the narrowband intermodulation distortion products and the desired signal;

setting the at least one of the bandwidth of rejection and the rejection of the filter to a non-zero value if the ratio of powers is above the predetermined threshold.

Whikchart and Khayrallah do not determine a ratio of powers that is "... the power for the narrowband intermodulation distortion products portion

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divided by the power for both the narrowband intermodulation distortion products and the desired signal..." and therefore cannot possibly suggest "... setting the at least one of the bandwidth of rejection and the rejection of the filter to a non-zero value if the ratio of powers is above the predetermined threshold" as recited in Claim 21. Claim 21 is thus further patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 22

Regarding Claim 22, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 21,

... setting the at least one of the bandwidth of rejection and the rejection of the filter to zero if the ratio of powers is not above the predetermined threshold.

Claim 22 is thus further patentably distinguished over Whikchart and Khayrallah for at least the reasons discussed above in connection with the allowability of Claims 20 and 21.

#### Allowability of Claim 23

Regarding Claim 23, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 21,

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... dynamically adjusting the predetermined threshold as a function of the power for both the desired signal portion and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 23 is thus further patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 24

Regarding independent Claim 24, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest a

... method an RF receiver, comprising:  
determining power for a signal distortion product;  
determining power for a desired signal;  
filtering the signal distortion product and the desired signal with a filter;  
dynamically adjusting a filter rejection property as a function of the power for both the desired signal and the signal distortion products.

Whikchart discloses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients. Col. 3: 8-11; 65-68. The Examiner's references to various passages of Whikchart and Khayrallah are misplaced. At col. 3, lines 8-41, Whikchart discusses DSP processing of a digitized IF signal. At col. 4: 5-38 and col. 4, lines 50 - col. 5, line 60, Whikchart discusses the selection of the switched filter coefficients.

The Examiner's reliance on Khayrallah is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of



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desired and adjacent signal strength. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah merely discusses adjacent channel interference. Neither Whikchart nor Khayrallah disclose or suggest "... filtering the signal distortion product and the desired signal with a filter" and "... dynamically adjusting a filter rejection property as a function of the power for both the desired signal and the signal distortion products" as recited in Claim 24. Claim 24 and the claims that depend therefrom are patentably distinguished over Whikchart and Khayrallah.

#### Allowability of Claim 25

Regarding Claim 25, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 24,

... determining whether a ratio of powers exceeds a predetermined threshold, the ratio of powers is the power for the signal distortion products divided by the power for both the desired signal and the signal distortion products;

dynamically adjusting a filter rejection property only if the ratio of powers is above the predetermined threshold.

Whikchart and Khayrallah do not determine a ratio of powers that is "... the power for the signal distortion products divided by the power for both the desired signal and the signal distortion products ..." and therefore cannot possibly suggest "... dynamically adjusting a filter rejection property only if the ratio of powers is above the predetermined threshold" as recited in Claim

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25. Claim 25 is thus further patentably distinguished over Whikchart and Khayrallah.

Allowability of Claim 26

Regarding Claim 26, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 25,

... dynamically adjusting the predetermined threshold as a function of the power for both the desired signal portion and the signal distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "signal distortion products". Claim 26 is thus further patentably distinguished over Whikchart and Khayrallah.

Allowability of Claim 27

Regarding Claim 27, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 24,

... the signal distortion products include narrowband intermodulation distortion products, determining power for the signal distortion products by determining power for the narrowband intermodulation distortion products.

Whikchart nor Khayrallah are concerned with filtering adjacent channel interference, not filtering "narrowband intermodulation distortion products".

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Claim 27 is thus further patentably distinguished over Whikchart and Khayrallah.

**Prayer For Relief**

In view of the amendments and the discussion above, the Claims of the present application are in condition for allowance. Kindly withdraw any rejections and objections and allow this application to issue as a United States Patent without further delay.

Respectfully submitted,



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